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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT

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In re:

Hien D. Ma et al.

Serial No. 09/388,926

Group Art Unit: 3621

Filed: September 2, 1999

Examiner: Calvin L. Hewitt, II

For: Method and Apparatus for Providing Prepaid
Music Card for Deciphering Recorded
Broadcast Audio Signals

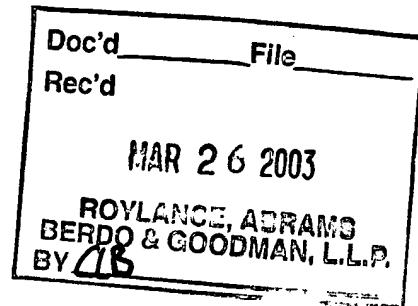
DECLARATION UNDER 37 C.F.R. §1.132

Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Hien D. Ma, do hereby declare and state:

- 1) I am a joint inventor in the above-identified patent application.
- 2) I am an employee of the assignee, XM Satellite Radio, Inc.
- 3) I have assisted in developing the XM Satellite Radio service, which is now operable across the United States.
- 4) XM Satellite Radio invested significant resources in order to license the portion of the radio spectrum allocated for Satellite Digital Audio Radio Service (SDARS) by the Federal Communications Commission (FCC), and to launch, operate and maintain two transmitting satellites which operate in the licensed portion of the radio spectrum. SDARS signals are advantageous over previous radio signals because they are digital and contain embedded auxiliary data, among other reasons.
- 5) Standard radio and television signals do not contain embedded data related to contemporaneous program segments.
- 6) The invention works differently than Digital Video Recorder (DVR) devices such as TiVo and SonicBlue's Replay TV because the auxiliary data embedded in the Digital



Audio Radio Service (DARS) signal transmitted by XM Satellite Radio Inc.'s satellites enables a receiver to determine when one broadcast segment ends and another begins without the need for reference to any synchronized time reference. This feature is particularly relevant to a commercial embodiment of the present invention, in which users are enabled to record broadcast content in exchange for monetary credit in the form of prepaid music cards.

- 7) DVR devices, such as TiVo and Replay TV, determine the start and end time of a program based on a clock in the DVR device, rather than by reference to any embedded data in the received signal. Thus, if programming is actually transmitted at a time offset from the scheduled time, the recording will not be accurate. This phenomenon is highlighted by TiVo's option to record extra time before or after a scheduled program.
- 8) The present invention is significantly different than packet-based network communication protocols such as IP traffic or other communications in which files or blocks of data are transmitted with "header" information. The present invention is designed to work with SDARS signals, which are broadcast contemporaneously from a small number of transmitters to a large number of receivers like traditional radio or television signals. The content transmitted is determined by the content provider, namely, XM Satellite Radio. This is contrasted with packet-based communications in which receivers request particular information in an on-demand fashion. SDARS signals advantageously contain embedded auxiliary data related to the program segment being transmitted. Thus, for instance, the XM Satellite Radio signal contains approximately 100 radio stations, each of which contain contemporaneous auxiliary data including "song name" "artist name" "channel name" and "channel number," among other data.

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9) Significant resources were invested in developing the SDARS signal definition used by XM Satellite Radio, Inc. This definition includes the transmission of auxiliary data along with audio content. It would not be obvious to replace a device as described in U.S. Patent No. 6,363,440 to Stepp et al., in which a video signal without embedded auxiliary data is stored, and start time data is inserted into the buffered signal at the receiver, with a system which embeds auxiliary data into the signal at the transmit end, and determines which portion of the buffered signal to record based on the embedded auxiliary data. The embedded data generated by the content provider at the transmitting end of the communication is inherently more accurate, and therefore more suitable to an embodiment in which monetary credits are deducted in exchange for the right to record a particular broadcast segment.

The undersigned declares further that all statements made herein of his/her own knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

3-21-03
Date


Hien D. Ma